

**Notice of Allowability**

Application No.

10/645,877

Examiner

Stephen Rosasco

Applicant(s)

BRISTOL ET AL.

Art Unit

1756

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Election 6/22/06.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office' action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 8/22/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### ALLOWANCE

In response to the applicant's traversal with respect to Groups I and II, the examiner will examine claims 1-20, leaving claims 21-31 as non-elected.

#### Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Cancel claims 21-31.

Authorization for this examiner's amendment was given by virtue of the election without traverse to the restriction requirement.

#### Reasons for Allowance

The following is an examiner's statement of reasons for allowance: the claimed invention is distinguished over the prior art of record in that the prior art does not teach - a mesh of wires supporting the first side of the membrane - as recited in the independent claim. The cited prior to -

Hibbs (6,731,378) teaches a system for reducing distortion of a pellicle in contact with a mask by providing a means for controlling the pressure between the pellicle and the mask.

Goldberg et al. (7,027,226) teach the membrane with the claimed thickness for EUV.

Goldberg et al. teach (see claims) an optical element for extreme ultraviolet (EUV) radiation wavefront control that comprises: a pattern of at least two bilayer structures.

Goldberg et al. also teach that for the mask to be used for EUV applications, the membrane used preferably is formed of silicon nitride (Si.sub.3N.sub.4), with thicknesses between 1000 angstroms (100 nm) and 2000 angstroms, the membranes are fairly transparent and can exist in free-standing form (no holes or apertures) covering areas as large as a square centimeter.

Butschke et al. (6,835,508) teach a membrane for EUV with a carrying ring for support. However, neither reference teaches the use of a wire mesh for supporting the membrane.

Butschke et al. teach (see claim 6) a large-area membrane mask for lithography methods using particle or short-wave radiation, comprising: a membrane layer formed with continuous openings defining a mask pattern; a first wafer made of a membrane material, said first wafer having a front surface and a rear surface, said membrane layer configured on said front surface, said first wafer having a well-type depression extending from said rear surface to said front surface and forming a membrane area and a first carrying ring concentrically surrounding said membrane area; and a second wafer made of a membrane material being patterned identical to said first wafer to form a second carrying ring; said second wafer being fitted on said membrane layer in a mirror-inverted manner with respect to said first wafer; and said membrane area defining a plane and being configured between said first carrying ring and second carrying ring in a centered manner in a direction perpendicular to said plane, said first carrying ring and said second carrying ring having substantially the same thickness.

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Butschke et al. also teach the membrane mask produced by this method can generally be employed for lithography methods using 13 nm lithography (so-called EUV beams).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

*Conclusion*

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Stephen Rosasco whose telephone number is (571) 272-1389. The Examiner can normally be reached Monday-Friday, from 8:00 AM to 4:30 PM. The Examiner's supervisor, Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Rosasco  
Primary Examiner  
Art Unit 1756

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8/07/06